

What is claimed is:

1 1. A method of providing reliability to an interconnect fabric for
2 communication among a set of nodes, the method comprising:
3 partitioning ports associated with each node into a first set of
4 ports and a second set of ports;
5 forming a first interconnect fabric among the first set of ports for
6 each node in response to a set of flow requirements; and
7 forming a second interconnect fabric among the second set of
8 ports.

1 2. The method according to claim 1, wherein said forming the first
2 interconnect fabric comprises generating arrangements of flow sets in
3 response to the flow requirements, determining one or more port
4 violations with respect to the first set of ports for each node and
5 alleviating at least one of the port violations by merging a pair of the
6 flow sets.

1 3. The method according to claim 1, wherein said set of nodes
2 includes source nodes and terminal nodes.

1 4. The method according to claim 1, wherein each node is
2 associated with at least two ports.

1 5. The method according to claim 1, said partitioning further
2 comprising partitioning the ports associated with each node into a
3 number of additional sets of ports.

1 6. The method according to claim 5, further comprising forming
2 additional interconnect fabrics among the additional sets of ports.

1 7. The method according to claim 1, wherein said forming said
2 second interconnect fabric is performed in response to the set of flow
3 requirements.

1 8. The method according to claim 1, wherein said forming said
2 second interconnect fabric is performed in a response to a relaxed set of
3 flow requirements.

1 9. The method according to claim 1, wherein when a source node or
2 a terminal node has an odd number of ports equal to $2n+1$, the first set of
3 ports for the node includes $n+1$ ports and the second set of ports for the
4 node includes n ports.

1 10. The method according to claim 1, wherein when a source node or
2 a terminal node has only one port, further comprising a step of coupling
3 an interconnect device to the port.

1 11. A system for providing reliability to a design for an interconnect
2 fabric for communication between a set of nodes, the system
3 comprising:

4 a set of design information including a set of flow requirements
5 for the interconnect fabric; and

6 a fabric design tool that generates a first design for the
7 interconnect fabric among of first set of ports for each node, the first
8 design being in response to the flow requirements, and that generates a
9 second design for the interconnect fabric among a second set of ports for
10 each node.

1 12. The system according to claim 11, wherein said fabric design tool
2 generates arrangements of flow sets in response to the flow

requirements, determines one or more port violations with respect to the first set of ports for each node and alleviates at least one of the port violations by merging a pair of the flow sets.

13. The system according to claim 11, wherein said set of nodes includes source nodes and terminal nodes.

14. The system according to claim 11, wherein each node is associated with at least two ports.

15. The system according to claim 11, wherein said fabric design tool further partitions the ports associated with each node into a number of additional sets of ports.

16. The system according to claim 15, wherein said fabric design tool forms additional interconnect fabrics among the additional sets of ports.

17. The system according to claim 11, wherein said fabric design tool forms said second interconnect fabric in response to the set of flow requirements.

18. The system according to claim 11, wherein said fabric design tool forms said second interconnect fabric in a response to a relaxed set of flow requirements.

19. The system according to claim 11, wherein when a source node or a terminal node has an odd number of ports equal to $2n+1$, the first set of ports for the node includes $n+1$ ports and the second set of ports for the node includes n ports.

1 20. The system according to claim 11, wherein when a source node
2 or a terminal node has only one port, an interconnect device is coupled
3 to the port.